

Application No.: 10/524,688
Art Unit: 3746

Amendment under 37 CFR §1.116
Attorney Docket No.: 052078

AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions of claims in this application.

1. (Currently Amended) A positive-displacement vacuum pump comprising:
a pair of pump rotors rotatably disposed in a casing, said pump rotors being rotatable synchronously in opposite directions; [[and]]
a motor configured to rotate said pump rotors; and
a pump-rotor controller for controlling rotation of said pump rotors through said motor in accordance with a predetermined pattern when said vacuum pump is started, the predetermined pattern including a combination of at least two of rotation of said pump rotors in a forward direction, rotation of said pump rotors in a reverse direction, and stop of the rotation.

2. (Cancelled)

3. (Previously Presented) A positive-displacement vacuum pump according to claim 1, wherein said predetermined pattern is set in said pump-rotor controller such that said pump rotors are driven in the order of the rotation in said forward direction, the stop, and the rotation in said forward direction.

4. (Previously Presented) A positive-displacement vacuum pump according to claim 1, wherein said predetermined pattern is set in said pump-rotor controller such that said pump rotors are rotated in the order of said reverse direction and said forward direction.

5. (Previously Presented) A positive-displacement vacuum pump according to claim 1, further comprising:

a state-judging device for judging whether said pump rotors are rotated normally or not when said vacuum pump is started;

wherein when said state-judging device judges that said pump rotors are not rotated normally at the time of starting said vacuum pump, said pump rotors are rotated in accordance with said predetermined pattern.

6. (Currently Amended) A method of starting a positive-displacement vacuum pump having a pair of pump rotors rotatably disposed in a casing, said pump rotors being rotatable synchronously in opposite directions, said method, comprising:

~~controlling rotation of~~ rotating said pump rotors by a motor in accordance with a predetermined pattern when said vacuum pump is started, the predetermined pattern including a combination of at least two of rotation of said pump rotors in a forward direction, rotation of said pump rotors in a reverse direction, and stop of the rotation; and

rotating said pump rotors by said motor in said forward direction in a steady state for evacuation.

7. (Cancelled)

8. (Previously Presented) A method of starting a positive-displacement vacuum pump according to claim 6, wherein said predetermined pattern is set such that said pump rotors are driven in the order of the rotation in said forward direction, the stop, and the rotation in said forward direction.

9. (Previously Presented) A method of starting a positive-displacement vacuum pump according to claim 6, wherein said predetermined pattern is set such that said pump rotors are rotated in the order of said reverse direction and said forward direction.

10. (Previously Presented) A method of starting a positive-displacement vacuum pump according to claim 6, further comprising:

judging whether said pump rotors are rotated normally or not when said vacuum pump is started;

wherein said pump rotors are rotated in accordance with said predetermined pattern when said pump rotors are judged not to be rotated normally.

11. (Currently Amended) A method of starting a positive-displacement vacuum pump having a pair of pump rotors rotatably disposed in a casing, said pump rotors being rotatable synchronously in opposite directions, said method comprising:

judging whether said pump rotors are rotated by a motor normally or not when said vacuum pump is started;

~~controlling rotation of rotating~~ said pump rotors by said motor in accordance with a predetermined pattern when said pump rotors are judged not to be rotated normally, the predetermined pattern including a combination of at least two of rotation of said pump rotors in a forward direction, rotation of said pump rotors in a reverse direction, and stop of the rotation; and

rotating said pump rotors by said motor in said forward direction in a steady state for evacuation.